

## CLAIMS

What is claimed is:

1. A vehicle assembly for use with a modular power control apparatus and a plurality of peripheral devices with the peripheral devices controlling one or more features  
5 of the vehicle assembly, said vehicle assembly comprising;
  - a support structure adapted to be mounted within said vehicle assembly;
  - a housing secured to said support structure;
  - a plurality of modules supported by said housing;
  - a connection port extending from each of said modules for electrically connecting  
10 each module to an associated peripheral device;
  - an interface module supported by said housing and having a communication processor to selectively interface with said plurality of modules for routing data to an appropriate module and peripheral device;
  - a data communication cable connected to said interface module and disposed outside  
15 of said housing for transferring data between said interface module and anyone of a variety of devices within said vehicle assembly; and
  - a power source connected to said housing;
  - said vehicle assembly characterized by a modular connector supported by said housing and electrically connected to said power source, said modular connector including  
20 a plurality of identical slots, said plurality of modules and said interface module being electrically connected to any one of said identical slots to transfer data between said modules and to provide electrical power to at least one of said modules, thereby facilitating

communication with the peripheral devices and providing electrical power to at least one of the peripheral devices within said vehicle assembly.

2. A vehicle assembly as set forth in claim 1 wherein said modular connector transfers electrical power to said interface module.

5           3. A vehicle assembly as set forth in claim 1 wherein said modular connector transfers electrical power to said interface module and at least one of said plurality of modules such that there are at least two modules receiving electrical power.

10           4. A vehicle assembly as set forth in claim 1 wherein at least one of said plurality of modules includes a power distributor for transferring electrical power from said modular connector to an associated peripheral device.

5. A vehicle assembly as set forth in claim 4 wherein said power distributor draws up to 5 amps of electrical power from said modular connector.

6. A vehicle assembly as set forth in claim 4 wherein said power distributor draws up to 7.5 amps of electrical power from said modular connector.

15           7. A vehicle assembly as set forth in claim 4 wherein said power distributor draws up to 10 amps of electrical power from said modular connector.

8. A vehicle assembly as set forth in claim 4 wherein said power distributor draws up to 15 amps of electrical power from said modular connector.

20           9. A vehicle assembly as set forth in claim 4 wherein said power distributor draws up to 20 amps of electrical power from said modular connector.

10. A vehicle assembly as set forth in claim 4 wherein said power distributor draws up to 30 amps of electrical power from said modular connector.

11. A vehicle assembly as set forth in claim 4 wherein at least one of said plurality of modules includes a switch for controlling said transfer of electrical power to the associated peripheral device.

12. A vehicle assembly as set forth in claim 1 wherein at least one of said plurality of modules includes a switch for controlling an associated peripheral device.

13. A vehicle assembly as set forth in claim 12 wherein at least one of said plurality of modules includes a plurality of switches for controlling a plurality of associated peripheral devices.

14. A vehicle assembly as set forth in claim 1 wherein at least one of said plurality of modules includes a sensing receiver for receiving electrical signals from an associated peripheral device.

15. A vehicle assembly as set forth in claim 1 wherein at least one of said plurality of modules includes a pressure receiver for receiving pressure sensing signals from an associated peripheral device.

16. A vehicle assembly as set forth in claim 1 wherein at least one of said plurality of modules includes an secondary connector electrically connected to said power source for providing an additional power supply to an associated peripheral device.

17. A vehicle assembly as set forth in claim 1 wherein said power source defines a maximum power level for said modular connector.

18. A vehicle assembly as set forth in claim 17 wherein said maximum power level is 100 amps.

19. A vehicle assembly as set forth in claim 17 wherein said maximum power level is 150 amps.

20. A vehicle assembly as set forth in claim 17 wherein at least one of said plurality of modules includes a power distributor for transferring electrical power from said modular connector to an associated peripheral device.

21. A vehicle assembly as set forth in claim 20 wherein an electrical draw by said power distributor of an associated module does not exceed said maximum power level and matches a particular electrical power requirement of an associated peripheral device.

22. A vehicle assembly as set forth in claim 20 wherein a combination of electrical draws by a combination of said power distributors of said modules does not exceed said maximum power level.

23. A vehicle assembly as set forth in claim 20 wherein an electrical draw by said power distributor from any one slot of an associated module does not exceed 30 amps.

24. A vehicle assembly as set forth in claim 1 wherein at least one of said plurality of modules is connected to two or more slots to exponentially increase an available electrical power input to an associated module, thereby varying an electrical power output to an associated peripheral device which is dependent upon a particular electrical power requirement of the peripheral device.

25. A vehicle assembly as set forth in claim 1 wherein said data communication cable includes a power supply for providing a maximum of one amp of power to a connected peripheral device.

26. A vehicle assembly as set forth in claim 1 wherein said modular connector is further defined as a circuit board.

27. A vehicle assembly as set forth in claim 1 wherein said modular connector is further defined as a cable type connector.

5        28. A vehicle assembly as set forth in claim 1 further including a second housing having a second plurality of modules, a second power source, and a second modular connector with said second housing being connected to said first housing through said data communication cable.

29. A modular power control apparatus for use with a plurality of peripheral devices, said apparatus comprising;

a housing;

a plurality of modules supported by said housing;

5 a connection port extending from each of said modules for electrically connecting each module to an associated peripheral device;

an interface module supported by said housing and having a communication processor to selectively interface with said plurality of modules for routing data to an appropriate module and peripheral device;

10 a data communication cable connected to said interface module and disposed outside of said housing for transferring data between said interface module and anyone of a variety of devices; and

a power source connected to said housing;

said apparatus characterized by a modular connector supported by said housing and  
15 electrically connected to said power source, said modular connector including a plurality of identical slots, said plurality of modules and said interface module being electrically connected to any one of said identical slots to transfer data between said modules and to provide electrical power to at least one of said modules, thereby facilitating communication with the peripheral devices and providing electrical power to at least one of the peripheral  
20 devices.

30. An apparatus as set forth in claim 29 wherein said modular connector transfers electrical power to said interface module and at least one of said plurality of modules such

that there are at least two modules receiving electrical power.

31. An apparatus as set forth in claim 29 wherein at least one of said plurality of modules includes a power distributor for transferring electrical power from said modular connector to an associated peripheral device.

5           32. An apparatus as set forth in claim 31 wherein said power distributor draws up to 30 amps of electrical power from said modular connector.

33. An apparatus as set forth in claim 31 wherein at least one of said plurality of modules includes a switch for controlling said transfer of electrical power to the associated peripheral device.

10           34. An apparatus as set forth in claim 29 wherein at least one of said plurality of modules includes a sensing receiver for receiving electrical signals from an associated peripheral device.

35. An apparatus as set forth in claim 29 wherein at least one of said plurality of modules includes a pressure receiver for receiving pressure sensing signals from an  
15 associated peripheral device.

36. An apparatus as set forth in claim 29 wherein at least one of said plurality of modules includes an secondary connector electrically connected to said power source for providing an additional power supply to an associated peripheral device.

37. An apparatus as set forth in claim 29 wherein said power source defines a  
20 maximum power level for said modular connector.

38. An apparatus as set forth in claim 37 wherein a combination of electrical draws by a combination of said modules does not exceed said maximum power level.

39. An apparatus as set forth in claim 29 wherein at least one of said plurality of modules is connected to two or more slots to exponentially increase an available electrical power input to an associated module, thereby varying an electrical power output to an associated peripheral device which is dependent upon a particular electrical power requirement of the peripheral device.

40. An apparatus as set forth in claim 29 further including a second housing having a second plurality of modules, a second power source, and a second modular connector with said second housing being connected to said first housing through said data communication cable.

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41. A modular data communication system comprising;

a housing;

a plurality of modules supported by said housing;

a connection port extending from each of said modules;

5        an interface module supported by said housing and having a communication processor to selectively interface with said plurality of modules for routing data to an appropriate module;

         a modular connector supported by said housing and electrically connected to each of said modules for transferring data between said modules;

10        a data communication cable connected to said interface module and disposed outside of said housing for transferring data between said interface module and anyone of a variety of devices; and

         a plurality of peripheral devices with each of said peripheral devices electrically connected to said connection port of an associated module wherein said peripheral devices  
15        communicate with said interface module through said associated module and said modular connector;

         said system characterized by at least one of said peripheral devices also being directly connected to said data communication cable independent from said connection to said associated module such that said at least one peripheral device communicates directly with  
20        said data communication cable outside of said housing independent of said interface module.

42. A system as set forth in claim 41 wherein said modular connector transfers electrical power to said interface module and at least one of said plurality of modules such

that there are at least two modules receiving electrical power.

43. A system as set forth in claim 41 wherein at least one of said plurality of modules includes a power distributor for transferring electrical power from said modular connector to an associated peripheral device.

5           44. A system as set forth in claim 43 wherein said power distributor draws up to 30 amps of electrical power from said modular connector.

45. A system as set forth in claim 43 wherein at least one of said plurality of modules includes a switch for controlling said transfer of electrical power to said associated peripheral device.

10           46. A system as set forth in claim 41 wherein at least one of said plurality of modules includes a sensing receiver for receiving electrical signals from an associated peripheral device.

15           47. A system as set forth in claim 41 wherein at least one of said plurality of modules includes a pressure receiver for receiving pressure sensing signals from an associated peripheral device.

48. A system as set forth in claim 41 wherein at least one of said plurality of modules includes an secondary connector electrically connected to said power source for providing an additional power supply to an associated peripheral device.

20           49. A system as set forth in claim 41 wherein said power source defines a maximum power level for said modular connector.

50. A system as set forth in claim 49 wherein a combination of electrical draws by a combination of said modules does not exceed said maximum power level.

51. A system as set forth in claim 41 wherein at least one of said plurality of modules is connected to two or more slots to exponentially increase an available electrical power input to an associated module, thereby varying an electrical power output to an associated peripheral device which is dependent upon a particular electrical power requirement of said peripheral device.

52. A system as set forth in claim 41 further including a second housing having a second plurality of modules, a second power source, a second modular connector, and a second plurality of peripheral devices, with said second housing being connected to said first housing through said data communication cable.

53. A system as set forth in claim 41 wherein each of said peripheral devices are connected to said connection ports of said modules by a first transmission cable and are connected to said data communication cable by a second transmission cable.